ARRAY Logo   icon

Custom Enterprise.com

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Abstract

Customization has always been considered a source of value addition to the customer. However, too often firms could not pull this lever due to operational limitations or the law of scale economies. Now, in the Internet age, unparalleled opportunities to customize through customer communication, product or service design and pricing open up.

Rebirth of customization?

Only a couple of hundred years ago every product could be said to have been customized. Mass production had yet to be invented. If you needed a chair, you went to the carpenter and the chair was made according to your specifications. If you needed a pair of shoes, you went to the shoemaker and they were cut to fit your feet. And the communication with the customer was, of course, very personal, always one-to-one, and in fact, seller and buyer might know each other very well.

This customized production, pricing and communication changed considerably with the advent of mass production. Products needed to be standardized in order to reap the full benefit of the assembly line. Once they were produced, those large quantities could not be sold only in the vicinity of the factory anymore, because there was usually not enough demand. Producers needed to exploit larger markets, first in the county or province, then in the country and finally in the whole world. Whole classes of intermediaries sprang up to move the products from factory to customer -- traders, merchants, dealers and retailers -- and as they did, the era of direct communication between customer and producer basically came to an end.

This new system was not without its costs. While production efficiency increased dramatically, and made goods available to vastly larger numbers of people at substantially lower costs, it also had the effect of slowing down the feedback loop between producers and customers. The Internet offers the opportunity to reestablish the communication loop between manufacturers and customers. The manufacturer can now produce for the world market but at the same time communicate with every single one of its end customers through the Web. This technology allows the rebirth of customization.

This is good news and bad news. Those companies that manage to customize their communication, production and pricing to the customers needs will be able to reap immense benefits. But it also means that through the quick feedback cycle and omnipresent communication capabilities, the fight for the survival of the fittest will pick up speed and ferocity.

A market and its seller-buyer relationships contains three main elements.

1. The <u>communication</u> between the two parties
2. The <u>product</u> to be sold and
3. The <u>price</u> to be paid for it

Customization is shaping these three fundamental elements of our market economy in the i-world. Before addressing the effects of customization, however we have to accept the new ways business is done via the Internet.

5 Elements of a successful Presence in the I-World

When you get ready to open a virtual store, you have to think about attracting traffic to your site and converting visitors into paying customers. Then you have to make sure that they come back again, spending more money on your site and buying products that not only generate revenue but also make the web site itself profitable. Customization can be a tool to support all five elements, especially for turning visitors into customers - the so-called conversion rate - and generating customer loyalty.

Traffic: If no one ever visits when you first open your virtual store, there is no chance that your web presence will ever make money. Therefore, you need a constant stream of new visitors, which means offering a sufficient variety of attractive offerings to draw them in. When you are creating traffic you are at the very beginning of the customer relationship. Because you have very little information about the customer, customization for the individual is difficult. However, customization can still help you to create traffic because customized web sites currently still generate a lot of publicity and lead to positive word of mouth -- at least for now, before customization has become the norm.

Conversion: Once you have generated a constant stream of visitors you have to convert them into paying customers. Customization can make sure that the exact information of interest for particular customers is displayed on the screen and that these customer will get exactly the products they want. The customization of the communication, the product and the pricing can therefore be a great help in increasing the conversion rate.

Loyalty: The next step is to transform the one-time customer into a loyal customer who keeps coming back to your web site to buy your product or service. Repeat business is as critical on the Internet as it is in any other form of marketing. Loyal customers require less marketing or set-up costs, generally provide a higher revenue per purchase, are less sensitive to price, and refer your site to their friends. Customer

loyalty is especially important in electronic commerce, where the switching costs between different web sites are relatively low. Customizing product or service offerings to a customer's individual needs is an effective method for increasing customer loyalty. Loyalty can also be increased through customized pricing because it offers the possibility to offer lower prices or a higher service level to your most loyal customers. Customer satisfaction is enhanced.

Share of Wallet: Once the retailer has convinced the customer to come back and buy again, the next step is to increase the revenue from this customer. Increasing the share of wallet means selling repeatedly to the same customer, and reducing the customer's purchases from competing retailers thus increasing revenue without increasing the number of customers. Customization becomes a crucial part of the strategy because the retailer gains the ability to anticipate customer needs and tastes the more information he has accumulated about the customer.

Product Margin: Finally, the retailer has to make sure that he sells products or services with high margins. When a retailer offers many different products, some products are more profitable than others. Therefore, to increase profitability, it is important to monitor the margins of the products a customer is buying and to actively promote the more profitable products; naturally, web site features that point customers to high-margin products are particularly precious. Again, customization can be valuable, because the retailer can focus its cross-selling activities on high-margin products. Sellers can enhance their shareholder value. Customers get more choice.

It is crucial to consider these factors before designing a virtual store. Choices concerning design of the user interface, the structure of the underlying database, the content of the web site, the interface with the production facilities, and choices of alliances with business partners may be completely different when the seller is focused on individual customers than they would be if the focus of the business were on, say, offering the lowest prices on the web.

Also measuring these five elements are necessary ingredients for growing a successful business. Demand capture starts with customized communication. Because of the wealth of information that can be digitized, retailers can tailor the communication about products or services to specific customers' needs. There are two basic models that can be used for customization, active customization, initiated by the customer, and passive customization, initiated by the retailer or manufacturer. Most of the time both models are used in combination to ensure a learning relationship (see insert).

To gain a fuller appreciation of the cost advantages of the Internet, we have to look beyond the measures of classic accounting. To analyze the effects on customization transaction costs (the cost of information and communication) have to be taken into account:

Contact costs: These are the costs of finding out where you can get a specific product or service. The Internet significantly reduces contact costs through its world-wide reach and puts an unbelievable amount of information at your finger tips

Contract costs: Because the Internet makes it much easier for the customer to compare products and prices and to close deals, contract costs can be greatly reduced for many products and services.

Configuration costs: The costs of adapting a product to the specific needs of the customer are also significantly reduced for certain products through the capabilities of the Internet. With a digital interface that supports customization and is directly linked and interconnected within the manufacturers company, the customer can configure the product to his own needs and tastes.

Control costs: The Internet also significantly reduces the costs of verifying that the order has been recorded correctly and where the order stands in the production or delivery process. This is especially important for customized products, because nothing is more annoying than when a product that is ordered especially to satisfy your particular needs arrives at your door and turns out to be wrong.

Active customization	*Passive customization*
- Customer initiates request for customized e-mails or information - Requires no prior information about the customer, because the customer volunteers the information - Allows retailer to collect valuable information about customers' needs and preferences	- Retailer uses the information he has about the customer to tailor the communication to the customer's likely needs - Information can be collected through analysis of buying and surfing patterns - Customer does not know that customization has taken place
Example: A customer actively selects certain categories of an online newspaper that he would like to read and also requests e-mail notifications for certain events that are of special interest to him.	Example: A customer has booked a diving holiday last year. The travel agent proactively informs the customer that airline seats and hotel reservations are available next month to a special diving location.

Customized communication

Customized communication always has to be meaningful for the recipient. It increases the convenience of the user because it delivers pre-selected information that is adapted to the users preferences. This can be done through customized mailings and a customized user interface. A customized user interface can mean displaying the information in the persons native language. It can mean to offer only meatless recipes to the vegetarian shopper in an online supermarket. It can mean adjusting the level on which the information is displayed to the expertise of the user.

Customized mailings inform the user about specific areas of interest to him and are therefore means to increase the traffic on a web site. Customized user interfaces welcome the user with a web site interface that is adapted to his needs and therefore are means to increase the loyalty of the customer. Once you have obtained information about users who surfed your web site you can start to use customized mailings. The same customized information that attracted the customer to your screen can also be used for mailings to get her to return. This in not the same as a cold mailing, because for cold mailings you don't know enough about the customer to be able to send a meaningful message. Cold mailings and "spam" are a scatter gun approach; customized mailings are rifles. Mailings to the customer and the interactive web site design, therefore, must be closely interlinked because most of the information for effective mailings will come from surfing and buying patterns.

Customized mailings, active or passive, fall in several different categories. They can inform about special product availability or remind about special timing (e.g birthdays), they can offer additions to products the customer has already bought (cross selling), answer personal questions, or they can give information about the order status. All types of mailings have the ultimate aim of getting the customer back onto the

web site to buy a product or service, sooner or later.

From the knowledge that the retailer has collected about the customer, he should be able to craft a message that will induce the customer to revisit the web site. The more accurate and detailed the information, the greater the opportunity to create an interesting offer. A self-enforcing cycle evolves: The better you know the customer, the more focused your customized mailings, the higher the chance that the customer will visit the web site again, the more information you can collect about the customer, the better your ability to send even more focused messages, and so on.

If you think you are sending customized mailings based on the tastes and needs of the individual customers only to find out that half the recipients send you a mail to take them off your list, you did something wrong in the first place. Either you do not know enough about the customer to create an interesting message or you have drawn the wrong conclusions from your information. In either case, your mailing wasn't customized properly. If the customers are not interested in the information that you are mailing them there is no point in forcing those mails onto their desktops. They will annoy the customer every single time he has to drag one to the trash bin. Sending e-mail to a large but unfocused e-mail list is still shooting with pellets. In the age of the Internet this is no longer necessary.

The same is true for advertising. Customized advertising is actually a combination of both customized user interface and customized mailings. The advantages of customized advertising are twofold: First of all the companies that are paying for ads are more willing to pay per hit if they can be sure that their advertisements are targeted to a pre-selected group of customers with some kind of demonstrable interest in that product. Secondly, potential customers who receive the customized advertising are less annoyed and more receptive, which leads to higher acceptance and higher buying ratios.

As advertising becomes more customized, it is perceived less as advertising and more as information worth paying for. Actively customized advertising for which the customer has defined exactly what kind of information he wants to receive, becomes almost indistinguishable from customized mailings or customized content, because customized advertising might actually be perceived by the user as value-added content.

Active customization: The Wall Street Journal

A good example of active customization is the personal journal of the Wall Street Journal, available by monthly subscription (www.wsj.com). The user defines the criteria for his personal journal and the journal is configured every day according to those criteria. The main features include:

- Select articles on specific areas of interest or on specific companies
- Select the stocks that are of interest for the customers portfolio
- Select e-mail alerts for breaking news in specific areas of interest or for specific stocks

The Personal Journal is easy to configure and works instantly after the first registration. The customization is based on information that the user enters himself and is therefore by definition adapted to the users needs at least at that point in time.

This active customization also has the effect of fostering customer loyalty. Firstly the user gets a higher benefit out of the personal journal than if he would receive the standard printed edition, because the journal is already configured to his needs. Secondly, chances rise that the customer will be loyal to the Wall Street Journal, because if he wants to change to a competitors offering he has to actively customize the new web site again.

Customized Products and services

Why do customers buy customized products or services? There are several reasons: They may looking for a product functionality that actually fulfills their desires or requirements. Or they may want added convenience; instead of selecting from a variety of different products, they can directly get what they want. Status and entertainment can also be important reasons for buying customized products. Some people enjoy designing customized products themselves and enjoy the attention they attract. And, last but not least, the price can be a consideration for customers since customized products can actually be cheaper than mass-produced products. When you take out the cost of standing inventory, distribution, store rental, and the risk of not selling something, the expense of custom design and assembly isn't all that forbidding.

So possible reasons for buying customized products are customization itself, added convenience, status and fun, and lower overall price. Appreciating which of these features are a selling point for targeted customers requires the ability look at customization from the viewpoint of customers first, because this is where every new strategy, product development or business idea should start. If there is no value added for the customer you do not have a business case.

What is the competitive advantage of customization for the manufacturer and what results does he anticipate on the revenue and the cost sides? On the revenue side customized production can address a larger market, help to achieve a higher market share by addressing more customer needs, or foster customer loyalty. On the cost side customized production can reduce costs through better planning options, real time market research, and cutting production costs directly by outsourcing part of the process to the customer.

In mass production products were produced for the average needs and tastes of the average user. But this will yield satisfactory results only if the actual desires of the customers are very similar. If you produce a stereo system only in black and this happens to be the preferred color of 90 percent of the potential customers anyway you have not satisfied only 10 percent of potential customers. If you decide to produce suits in only five different sizes you might find that you are not fulfilling the needs of about 70 percent of your potential customer base. Therefore, the distribution of needs and tastes also determines the size of the additional customer potential that can be tapped through customization. Customization of suits in the example would open up a market of 70 percent of suit buyers whereas a variation of color in stereo systems would only yield an additional customer base of 10 percent.

Not that the people who do not get suits that fit them would go naked today. Instead they will buy suits that do not fit them. So the total market for suits will probably not increase through customization, but the people who had to buy ill-fitting suits so far will shift their buying power from their previous manufacturer to you. You increase your share of a stable total market by adapting your product to the

needs of customers who have so far remained unsatisfied.

Mass customization combines the advantages of mass production, such as economy, continuity, and stability of the production processes, with attention to the tastes and service requirements of individual customers. Products are not one of a kind, but assembled to order for the individual customer from mass-produced components. Probably one of the best-known examples is Dell Computers. There is no standard Dell PC, although the whole production chain and final assembly are highly standardized. However, the resulting computer are highly individual. Dell showed the world that custom made PCs neither be more expensive than mass produced PCs nor have longer delivery times.

In many cases, the key to cost effective mass customization will be products built from various modules that can be personalized and combined. Modularization increases the external variety of choices available to the customer while at the same time keeping the internal variety of parts and production processes at manageable levels. Those modules with a long production lead time should have the greatest measure of standardization, whereas elements that can be changed quickly during the production process can be offered in more variations.

But even products that are not manufactured from modules can offer mass customization potential, as long as the customization is limited to a few steps in the production process. Internal variety can also be reduced if the production process uses identical materials. Variety only emerges at the end of the process. The aim is to keep costs down but at the same time offer variations that mean the most to the customer.

The fashion industry offers excellent examples of mass customization that provides high external variety while at the same time keeping the internal variety to a minimum. The production process for a customized pair of jeans differs from the production process for standard jeans by only two steps. The customized jeans can use the same fabric, the same sewing machines, the same production facilities, and the same washing machines. They actually differ because they are cut to the customers size individually, while standard jeans are cut many at a time, and they are delivered to the customer individually while standard jeans are delivered in bulk to the store.

Whether a product is "customizable" depends very much on its design. When Dell started to build computers to order, computers were already built out of modules, so there was no need to redesign the product. For other products that might not be the case. To be able to effectively produce and sell a mass-customized product, you might have to redesign the product first. If there is a cost increase through the customization you have to ensure that the increase will be covered by a price premium that the customer is willing to pay.

In order to reap the full benefits of customized products, all relevant processes within the company have to be integrated into one networked IT-system. The order from the customer ideally should go directly into the production system, warehousing systems and supplier systems. Internal IT-systems like order entry and customer care have to be integrated as well. The underlying database structure is crucial for successful customization. As long as there are system breaks the company has to bear higher cost of varying its production process and is not reaping the full benefit of e-commerce.

The Virtual Sales Assistant

The single most important web site feature for selling customized products is a customer interface that helps the customer to find or define what he actually wants. A virtual sales assistant can help the customer come up with a unique product that satisfies his needs. It is especially important to help the customer if the design is an important part of the customization and the look of the product.	The virtual sales assistant asks the customer a few questions like proposed uses of the product, price range, personal taste etc. and will then propose one or a few customized products that fits the needs of the customer and can be further adapted, if necessary.

Customized pricing

The dynamic and customized prices available on the Internet convey more information than static prices. First the manufacturer can change to dynamic pricing, which means that he can adjust the price to the current situation. And he can customize the price which means the price not only changes over time but might also be different for two different customers at any one time. Dynamic pricing and customized pricing are actually two different things: the first changes with time, the second with the customer. But the Internet opens up new opportunities for both types of price differentiation either one at a time or in combination, which might provide the greatest benefit.

Customized pricing can be used to achieve a variety of goals. It can be a necessary complement for customized production capabilities, or it can be used to increase traffic on a web site, enhance share of customer wallet, build customer loyalty, or boost profitability.

The advantage of the Internet is that you can design much more complex pricing structures than in the offline world. No one has to understand the logic behind the structure, neither your own sales people nor the customer. People log on, click on the modules they want as part of the product and you instantly prompt them with the price. If they don't like the price they can start to play around with the modules they have selected and quickly figure out the selection that best suits their needs. The price is a running count that changes online while your customer customizes the product or service.

As with communication, pricing can also be customized actively or passively. Passive customization happens if the customer selects a product and is quoted a price based on product availability, production line utilization, his loyalty and profitability, and any number of other factors. Active customization takes place if the customer states the price he would be willing to pay for a certain product or service and the manufacturer then accepts or declines the offer. The other option for active customization in a setting where several customers actively determine the price as in the case of an online auction. Based on the available technologies and database systems dynamic and customized pricing in real time is feasible now.

Real Time Market Research:

"Launch and Learn"

Because all customer information is available in a digitized format, companies can find out online and real time what their customers really want. In order to maintain and expand existing market positions, companies do not only have to think about their customers of today, but also about strategies for tomorrow, however. The learning relationship with the customer can provide valuable insights into future trends that brick and mortar companies can only obtain through costly market research. If a product sells well, it does not necessarily mean that this is exactly what the customer wanted, maybe it was just the best among a selection of bad choices. This is where online customization can make a difference: through the process of active customization, the customer reveals his exact preferences and provides input for market research and future product development at the very same time.

Advantages of real time market research:

- First hand information which is not diluted by retail channels
- Real time access as soon as the customer has placed the order
- High information quality not only on assembled products but also on parts of products (modules)

The crucial variable for real time market research is the number of customers who frequent your site. If you only have few customers, you have a smaller base for conducting your real time market research. Therefore, it might take you longer to pick up a new trend or desire. Firms with slower feedback loops will react more slowly to changes in the demand and therefore fulfill demand later. Inevitably they lose customers to sites that already offer the desired options. As soon as there is less traffic, the ability to conduct real time market research decreases further, and with it the chance to catch up again.

Outlook

As the technical infrastructure becomes increasingly abundant and new technical possibilities offer more and more opportunities for adapting to the needs of individual customers, the focus of competition shifts towards the creation of customer value through customization. Every company can use customization as a tool to support its particular business model or strategy in the business-to-business and business-to-consumer markets. The three options -- customized communication, production, and pricing -- can be employed in combination or separately. Even if you feel that the particular product you are selling cannot in any way be customized, you can still customize your customer communication and the pricing. Now that the technical options for customization are there and the idea has been developed, every company can now choose one of three basic options:

Attack: A company can incorporate the ideas above and start to become a customized enterprise itself. If done properly it will ensure that most of their competitors will only show up in their rear-view mirror. Others might still be able to catch up even when starting late, but the first mover advantage ensures that they will face an uphill battle. Many brick-and-mortar companies are afraid of starting a customized Internet business, however, because they are afraid that it might actually be successful and cannibalize their other business. But at second thought the real choice is to cannibalize yourself or be eaten alive by others. *Defend:* A company can choose not to start a customized business but to prepare instead for the fact that current competitors or other players will incorporate the idea of customization. The principles outlined above will help them to prepare their response to these changes in the competitive landscape. Since the Internet offers a distinct first-user advantage, starting second in the market however is in many

cases not an appealing option. Therefore analyzing how you could react to others starting a customized Internet business will often lead you to the conclusion that it is better to choose the first option instead.

Do nothing: Finally the company can ignore both of these options and continue to do business as usual. This would be commercial suicide. The time of its extinction will be determined by the speed with which other companies move towards customization on the Internet. The principle of survival of the fittest remains unchanged.